

On the fishes collected by the Ladakh Expedition, 1976¹

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(With two text-figures)

The paper reports on the fish collection of the Ladakh Expedition, 1976. The collection though small, is of interest as it contains an undescribed species of the Palaearctic cyprinoid genus *Gymnocypris* Günther, 1866, a specialised Schizothoracine genus reported here for the first time from the faunal limits of India. An annotated list of the fish fauna of Ladakh district of Jammu & Kashmir State, is presented.

INTRODUCTION

The Ladakh Expedition, 1976 was sponsored jointly by the World Wildlife Fund and the Bombay Natural History Society to determine the present status of the blacknecked (or Tibetan) crane, *Grus nigricollis* Przevalski, the barheaded goose, *Anser indicus* (Latham) and other so-called game birds and mammals. The present communication reports on the fish collections made in the cold and inaccessible regions traversed by the Expedition which was led by Dr. Sàlim Ali and included in its team Dr. Biswamoy Biswas of the Zoological Survey. The collection though small, is of interest for the purpose of ascertaining what are the chief characteristics of the fish fauna and what relationship it bears with those of the contiguous Asiatic regions.

The fish fauna of Kashmir has attracted considerable attention ever since Heckel (1838) published 'Fische aus Cashmir', the majority of the contributions, however, pertain mainly to the Kashmir Valley (Silas 1960 ; Das & Subla 1966 ; Das *et al.* 1964 ; Das 1965 ; Das & Nath 1965 ; Saxena 1968) and the fishes occurring in the Ladakh region beyond the limits of the

Kashmir Valley are not included. Studies have rather rarely been undertaken in the Ladakh region of Jammu & Kashmir State and most of our knowledge of the fishes of this region is due to the labours of the Second Yarkand Mission (Day 1876, 1878) and the Yale North Indian Expedition in 1932 (Hora 1936 ; Mukerji 1936). The present collection consists of three species belonging to the family Cobitidae, and two cyprinoid species of the subfamily Schizothoracinae of which one is new to science. Opportunity is taken here to present an annotated list of the fish species reported from the Ladakh district of Jammu & Kashmir State with the hope it will serve as a base for future ichthyological and general fisheries research in this region.

SYSTEMATIC ACCOUNT

Order Cypriniformes

Family CYPRINIDAE

Subfamily Schizothoracinae

Gymnocypris biswasi sp. nov.

Material :

(i) HOLOTYPE (Text-fig. 1), a fish 117 mm in standard length, Chushul (Ladakh), c 4358 m, 1. vii. 1976, coll. B. Biswas ; Zoological Survey of India Regd. no. FF 1064.

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(ii) PARATYPE, a fish 129 mm in standard length, same data as for the holotype; ZSI Regd. no. FF 1065.

(iii) 9 juveniles, 6-31 mm SL., Chushul, c 4358 m, 1. vii. 1976, coll. B. Biswas, ZSI Regd. no. FF 1066.

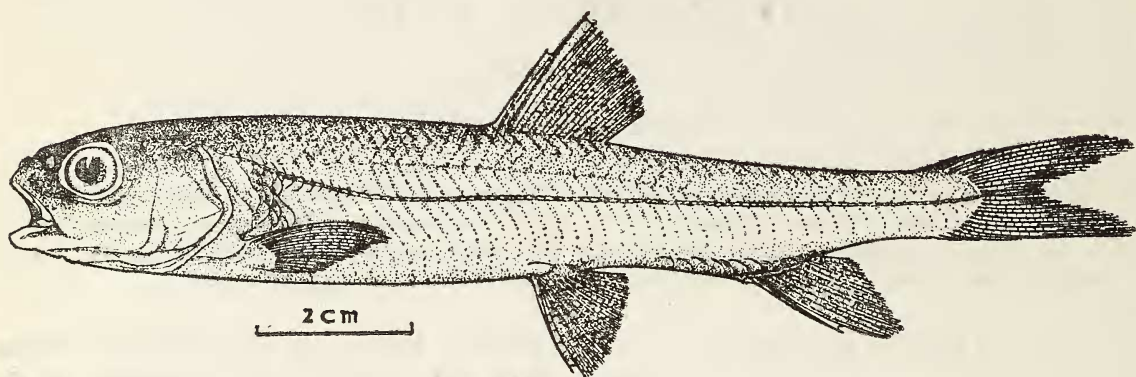


Fig. 1. Holotype of *Gymnocypris biswasi* sp. nov.

Measurements (in mm) (those of the paratype given in parenthesis): Total length 140 (155), standard length 117 (129), depth of body 17.5 (20), length of head 28 (30), eye diameter 7.5 (8.0), interorbital width 7.5 (8.0), length of upper jaw 7.5 (8.5), length of lower jaw 10 (10.5), length of pectoral fin 20 (21.5) and length of pelvic fin 16.5 (17.5).

Description: Based on the holotype and the paratype.

Brst iii; D III 8; A II 6; P i 19; V i 10; C 19.

Gillrakers on first arch 1+12, short and stout (paratype examined only).

Body elongate, slightly compressed, abdomen rounded. Head moderate, conical, snout tip distinctly above the level of the lower margin of eye. Eyes large, rounded. Mouth terminal, transverse, without peculiarities, margin of lower jaw rounded and its inner edge with a horny covering; maxillary extending to below vertical from anterior border of eye. No barbels. Gill openings moderate, gill membrane attached to isthmus opposite to preopercular angle. Vent near origin of anal fin, surrounded by a spongy pad.

Pharyngeal teeth in two rows, 2, 3/3, 2.

Body naked except 3 to 5 rows of scales above the pectoral fin axil and on the commencement of the lateral line, and a scaly sheath of 17 to 20 enlarged tiled scales behind the base of ventral fin to along the base of anal fin. Pelvic fin with an axillary scale. Lateral line at first descends gently and then reascending attains the middle of the body opposite the posterior extremity of the dorsal fin.

Dorsal fin short, its origin slightly nearer to tip of snout than to base of caudal fin; first dorsal spine minute and embedded in the skin (hence not shown in fig. 1), third dorsal spine rather coarsely serrated posteriorly in its basal two-thirds. Pectoral fin low, considerably shorter than head length. Pelvic fin origin below vertical from 3rd to 4th soft dorsal ray. Anal fin short, reaching the base of the caudal fin when laid flat. Caudal fin forked.

Colour: In alcohol, back grayish black, sides lighter, with no distinctive markings. Peritoneum dusky.

The new species is named in honour of Dr. Biswamoy Biswas, Deputy Director, Zoological

Survey of India, Calcutta, the collector of the species.

Remarks: The genus *Gymnocypris* was established by Günther (1868) for the reception of a new species, *G. dobula* based on a specimen from the Haslar Collection from an unknown locality. This genus is closely allied to the genus *Schizopygopsis* Steindachner, 1866, from which it differs in having a terminal mouth and the presence on the lower lip of a horny layer on the inner side (*versus* anterior margin) and absence of a sharp horny covering to the lower lip which is characteristic of the latter genus (see fig. 2). *Gymnocypris* is one of the specialised Schizothoracine genera (Hora 1953) and

Regan, 1905. It differs from the latter species by the absence of 'humping' in front of the dorsal fin and by the smaller number of pharyngeal teeth (2, 3/3, 2 vs. 4, 3/3, 4). Further, there are no spots on the back of the body.

Das *et al.* (1964) in a paper not seen by me, discussed the Palaearctic elements in the fish fauna of Kashmir. *Gymnocypris biswasi* represents another Palaearctic element in the ichthyofauna of Kashmir. Silas (1960) and Saxena (1968) were of the opinion that the bulk of the indigenous fish fauna of Kashmir Valley is composed of the Palaearctic elements (of Central Asiatic origin).

Schizopygopsis stoliczkae Steindachner

Schizopygopsis stoliczkae Steindachner, 1866, *Verh. zool. bot. Ges. Wien.*, 16 : 786, pl. 16, fig. 2; Day, 1878; *Fishes of India* : 531, pl. 124, fig. 2.

Material: 1 ex., 88 mm SL., Chushul, c 4358 m, 6. vii. 1976, coll. B. Biswas; ZSI Regd. no. FF 1067.

Distribution: Endemic in the North-west Himalaya (Jayaram 1974); Ladakh, the Kashmir Valley and headwaters of the R. Indus.

Remarks: Das & Subla (1966) reported this species from the Kashmir Valley. Jayaram (1974) was of the opinion that it occurs at lower elevations only very rarely and the few isolated reports represent no doubt stray specimens that have been washed down to the lakes in the plains by sporadic flash floods, to which most of the Himalayan rivers are subject.

Family COBITIDAE

Noemacheilus deterrai Hora

Nemachilus deterrai Hora, 1936, *Mem. Conn. Acad. Arts Sci.*, 10 : 311, fig. 4 (type loc. : Man Lagoon, Ladakh).

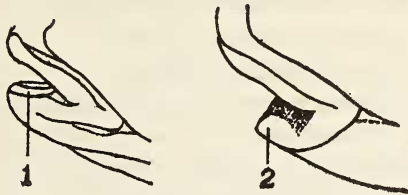


Fig. 2. Showing the difference of the horny structure of the lower jaw between the genera *Gymnocypris* and *Schizopygopsis* (after Tchang, Yuch & Hwang, 1964).

1. horny layer on the inner side of the lower jaw in the genus *Gymnocypris*. 2. horny layer covering the anterior margin of the lower jaw in genus *Schizopygopsis*.

the record of this genus from the faunal limits of India for the first time, is of significance. Jayaram (1974) in a discussion of the distributional patterns of the primary freshwater fishes of India, listed only the following four genera which are restricted to the Palaearctic of India : *Schizopygopsis*, *Schizothorax*, *Ptychobarbus* and *Cyprinion*.

Among the species of *Gymnocypris* described by Herzenstein (1888), Regan (1905), Stewart (1911) and Tchang *et al.* (1964), *Gymnocypris biswasi* is most closely allied to *G. waddellii*

Material : 1 ex., 56 mm SL., Chushul, c 4358m, 6. vii. 1976, coll. B. Biswas ; ZSI Regd. no. FF 1069.

Distribution : Ladakh.

Remarks : This species was hitherto known only from its type-specimens and the present collection is hence of interest.

Noemacheilus ladacensis Günther

Nemachilus ladacensis Günther, 1868, *Cat. Fishes Br. Mus.*, 7 : 356 (type loc. : Ladakh) ; Hora, 1922, *Rec. Indian Mus.*, 24 (1) : 78.

Material ; 5 ex., 43-56 mm SL., Chushul. c 4358 m, 6. vii. 1976, coll. B. Biswas ; ZSI Regd. no. FF 1068.

Distribution : Ladakh.

Remarks : Hora (1922) has shown that Day's *Nemachilus ladacensis* differs from Günther's original account of the species and probably represents a different species. Only a few specimens of this species are known so far and, in consequence, its specific limits have not yet been precisely defined (Hora 1936). The present collection of five topotypes is, therefore, of importance.

Noemacheilus panguri Hora

Nemachilus panguri Hora, 1936, *Mem. Conn. Acad. Arts Sci.*, 10 : 318, fig. 8 (type loc. : Pangur Tso, c 14,203' and Tzo Nyak, Ladakh).

Material : 1 ex., 59 mm SL., Chushul, c 4358m, 6. vii. 1976, coll. B. Biswas ; ZSI Regd. no. FF 1070.

Distribution : Ladakh.

Remarks : This species was earlier known only from its type-specimens and the present record is hence of interest.

The species at present known from the Ladakh District of Jammu & Kashmir State may be classified as follows :

Order Siluriformes

Family SISORIDAE

Glyptosternon reticulatum McClelland
Glyptosternon stoliczkae (Day)

Order Cypriniformes

Family CYPRINIDAE

Subfamily Schizothoracinae

Diptychus maculatus Steindachner
Gymnocypris biswasi Talwar
Oreinus richardsonii (Gray)
Ptychobarbus conirostris Steindachner
Schizopygopsis stoliczkae Steindachner
Schizothorax curvifrons Heckel
Schizothorax esocinus Heckel
Schizothorax hugelii Heckel
Schizothorax labiatus (McClelland)
Schizothorax longipinnis Heckel
Schizothorax micropogon Heckel
Schizothorax nasus Heckel
Schizothorax niger Heckel
Schizothorax planifrons Heckel
Schizothorax progastus (McClelland)

Family COBITIDAE

Noemacheilus deterrai Hora
Noemacheilus gracilis Day
Noemacheilus hutchinsoni Hora
Noemacheilus ladacensis Günther
Noemacheilus microps (Steindachner)
Noemacheilus panguri Hora
Noemacheilus stoliczkae (Steindachner)
Noemacheilus tenuicauda (Steindachner)
Noemacheilus yarkendensis Day

Recent workers (Misra 1962 : Saxena 1968 ; Menon 1971, 1974 ; Tilak & Sinha 1975) treated the species of *Schizothorax* listed above under the genus *Schizothorachthys* Misra, 1962, and considered *Oreinus richardsonii* (Gray) under the genus *Schizothorax* Heckel, 1838. I have shown (Talwar, MS) that the genus *Schizothorachthys* Misra is a junior synonym of the genus *Schizothorax* Heckel and further that the genus *Oreinus* McClelland is a valid genus in accordance with Article 69 of the

International Code of Zoological Nomenclature.

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